By a curious coincidence, intelligence has just reached us of the safe arrival in Auckland, New Zealand, of 40,000 salmon eggs from the Columbia River, North-west America. These eggs were sent from San Francisco by steamer, consigned to the Napier Acclimatisation Society; but on arrival at Auckland they were found to be so far advanced that it was determined not to risk sending them all to Napier, but to distribute them immediately in suitable localities in the neighbourhood. One half was thus treated, and the remaining 20,000 were sent on to their original destination, Napier. There is every probability that an actual colony of salmon has now been planted in New Zealand, for the fry were in a very healthy condition, and great care was taken by Mr. Firth to protect those placed in the rivers from all possible enemies.

The last issued number of the Transactions of the Institute of Engineers and Shipbuilders of Scotland contains a paper, by Prof. James Thomson, on "Comparison of Similar Structures as to Elasticity, Strength, and Stability."

In a report published by General Chanzy, Governor-General of Algeria, it appears that the organisation of a sanitary service has been completed all over a country which is larger than Great Britain. In every district has been established a *médecin de colonisation*, who is appointed after having passed a special examination, is paid by Government, and is not allowed to take fees.

A paper on the *Batrachia* and *Reptilia* of Costa Rica, with notes on the reptiles of Nicaragua and Peru, by Prof. Cope, has recently appeared in the quarto journal of the Philadelphia Academy of Natural Sciences. Most of the Costa Rican materials were obtained from the researches of Dr. William M. Gabb, who was engaged for several years in exploring that country in behalf of the Costa Rican Government, by which he has added very largely to our knowledge of the geography, geology, general natural history, and ethnology of the region. He has already published many papers in all these departments, and it is to him we owe our only reliable information in regard to the Costa Rican aborigines. The first series of the collections made by Dr. Gabb have all been presented by him to the National Museum, in Washington, and they constitute a highly valued portion of the extensive collections of the establishment. Other collections employed in this memoir are those of Dr. Van Patten and Mr. C. N. Riotti, these covering the region extending from the Atlantic to the Pacific. Eighty-nine species were furnished by Prof. Gabb, of which thirty-seven were new to science. The total number of species known from all investigators in Costa Rica is 132, and it is probable that a large number yet remain to be discovered, showing that the region is rich in terrestrial cold-blooded vertebrates.

The additions to the Zoological Society's Gardens during the past week include a Leopard (*Felis pardus*) from Africa, presented by Mr. F. Elton; a Black Lemur (*Lemur macaco*) from Madagascar, presented by Mr. Dugald Gilchrist; a Common Marmoset (*Hapale jacchus*) from Brazil, presented by Master F. F. Goodliffe; two Gannets (*Sula bassana*), European, presented by Lieutenant-Colonel Dugmore; a Rose Hill Parrakeet (*Platycercus eximius*) from New South Wales, presented by Mr. J. Smith; a Roseate Cockatoo (*Cacatua roseicapilla*) from Australia, presented by Dr. Bree; three Brazilian Caracaras (*Polyborus brasiliensis*) from South America, deposited; a Coypu Rat (*Myopotamus coypus*), a Spotted Cavy (*Cœlogenys paca*), a Central American Agouti (*Dasyprocta punctata*) from South America, a White-spotted Crake (*Porzana notata*) captured at sea off Cape Santa Maria, three Geoffroys Terrapins (*Platemys geoffroyana*) from the Argentine Republic, a Maximilian's Terrapin (*Hydromedusa maximiliani*) from Brazil, purchased.

SCIENTIFIC SERIALS

The current number of the *Quarterly Journal of Microscopical Science* commences with a memoir, by Dr. G. Thin, on the structure of hyaline cartilage as found by immersing it in a solution of caustic potash at 107° F., and otherwise. A successful potash preparation shows flattened polygonal cells adhering to each other exactly like an epithelium. Much manipulatory experience is necessary for the demonstration of these, and it must be mentioned that the author has "a strong conviction of the uniformity of plan in the general structure of the tissues."—Mr. Hugh Price writes on a polystomatous condition of the hydranths of *Cordylophora lacustris*, and figures his specimens. His observations tend to show that the polystomatous condition may be due to injury of the parent hydranth.—Prof. E. R. Lankester, F.R.S., contributes two papers; the first, including further observations on a peach, or red-coloured Bacterium (*Bacterium rubescens*), in which a further account of that organism is given. The second is a valuable account of Prof. Haeckel's recent additions to the Gastræa-theory, illustrated by four important plates exemplifying the letterpress. The following terms are fully explained: Palingeny and Cenogeny, the tendency to recapitulation and to suppress the details of ontogenetic development; Heterochrony and Heterotopy, the perturbations in ontogeny as regards time and space. The conceptions with which these terms are associated must be fully mastered by all who study evolution from its developmental aspect. The four chief types of egg-cleavage and of Gastrula-formation are then explained, and the stages which each undergo, the monerula-, cytula-, morula-, blastula-, and gastrula-stages are recounted, the prefixes archi-, amphi-, disco-, and peri- being applied to the four respectively. The nomenclature, though at first apparently formidable, much simplifies this otherwise complex subject.—Mr. C. S. Tomes, in writing on the development of teeth, gives a summary of the many and important results at which he has arrived in his valuable researches, together with the investigations of others which bear on the subject. Goodsir's primary open dental groove is shown to have no existence. In reality an ingrowth is shown to develop from the deep layer of the epithelium, consisting of a double layer of cells burrowing down into the submucous tisssue, and looking in transverse section like a tubular gland. The next stage consists of an active growth of cells in the deepest end of the epithelial inflection, the immediately subjacent tissue at almost the same time becoming elevated at corresponding points where teeth are to be developed; the subjacent tissue forming a conical papilla, the enamel organ appearing with or even before the papilla. Many important points in the tooth-development of the lizard and fish are also discussed.—Dr. Percival Wright has a note on *Stenogramma interrupta*, in which the author proves that the tetrasporic fruit of that rare and beautiful Alga was described by Dr. W. H. Harvey, contrary to the assertion of Mr. E. M. Homes.—Mr. W. Bevan Lewis describes the best methods of making preparations of sections of cerebral and cerebellar cortex for microscopical examination.—Mr. H. C. Sorby, F.R.S., has a paper on the evolution of Hæmoglobin, based mainly on the fact that the centres of the hæmoglobin bands from the red blood of *Planorbis* lie two and a half or three millionths of a millimetre nearer the blue end of the spectrum than do those of vertebrate blood.—Reviews of Dr. Klein's "Anatomy of the Lymphatic System," Part II., and of the English translation of Frey's "Histology and Histochemistry of Man," are also given, followed by notes, proceedings of societies, &c.

The number for July 1875 of Siebold and Kölliker's *Zeitschrift für Wissenschaftliche Zoologie* opens with a valuable contribution by Dr. Claus, to our knowledge of the parasitic Copepoda, under the following headings:—The genus Hersilia; the classificatory value of the oral apparatus; the Ergasilidæ; the Nereidicolidæ; the Ascidicolidæ; the Siphonostoma, and the genus Lamproglena. Several excellent plates illustrate the paper. Dr. Claus concludes that a natural classification is at present impossible, because of the gaps in our knowledge of many points in the organisation and development of these remarkable parasites.—Dr. Ludwig Stieda gives a detailed description of the general and microscopic structure of the brain and spinal cord in the Chelonia, derived from the examination of *Testudo Græca* and *Emys Europæa*—a much-needed acquisition.—Dr. Ludwig Graff describes several new species of Turbellaria.—O. Bütschli, in a controversial article on the Infusoria, contests the received interpretations of the phenomena following their conjugation, and endeavours to show that Häckel and Claus have made no real

©1876 Nature Publishing Group

advance in the morphology of Infusoria by their recent researches.—Prof. Selenka contributes a concise but very interesting account of the development of *Phascolosoma elongatum* from impregnation to the fourth day, beyond which his specimens did not develop. The changes in the first few hours after impregnation are carefully figured at brief intervals; the formation of the alimentary canal by invagination was very clearly made out. Prof. Selenka contemplates publishing a monograph on the Gephyreans.—Prof. H. Nitsche gives a preliminary account of his researches on the structure and budding of *Loxosoma Kefersteinii;* the most important result he claims to have demonstrated is the exclusive origin of the bud from the ectoderm of the parent, so that there is a direct conversion of ectodermal elements of the parent into entoderm elements of the offspring.—Dr. Anton Dohrn gives a full account of the regulations and management of his zoological station at Naples.

The September number of the same journal opens with some very interesting observations made in the aquarium at the Naples Zoological Station by Prof. Kollmann, chiefly relating to the Cephalopods. The most notable paper is one by Dr. Malbranc on the lateral lines and their sense-organs in Amphibia. The positions in which these organs occur are described and figured for a number of species in each main division of Amphibia, the nerves which supply the lateral-organ system are traced, especially the distribution of branches of the vagus, and the microscropic structure of the organs is described and figured. He shows their intimate correspondence in structure with the taste-goblets of the Tadpole, the similarity of the characteristic cells being remarkable. The discovery of taste-goblets in many species of Amphibia is also recorded, and is to form the subject of another paper.—Prof. Kollmann contributes a paper describing his investigations on the circulation in Aplysiæ, Lamellibranchs, and Cephalopods. Among the most important of his conclusions are that Aplysiæ and Lamellibranchs have arterial hearts, and that there is not really any lacunar system in Cephalopods. He has also made very careful investigations as to the admission of water into the blood in many Mollusca.—O. Bütschli gives a brief contribution on the development of *Cucullanus elegans,* showing the formation of its embryo by a process of involution. It is connected in several important characters with the embryo of Sagitta.—Dr. Dohrn has a paper of fragmentary notices on Insect Development, devoted principally to points in the development of the Silkworm and the Mole-cricket.—One of Dr. von Willemoes-Suhm's letters from the *Challenger* concludes the number.

Reichert and Du Bois Reymond's Archiv, Nov. 1875.—This number includes a continuation of Robert Hartmann's contributions to the knowledge of the anthropomorphic primates, dealing with the osteology of a number of specimens of chimpanzee collected by Dr. Schweinfurth; the conclusion of Paul Mayer's elaborate account of the anatomy of *Pyrrhoeoris apterus;* and an article by L. Dittmer on the theory of double monsters.

SOCIETIES AND ACADEMIES

LONDON

Chemical Society, Jan. 20.—Prof. Odling, F.R.S., vice-president, in the chair.—Dr. Armstrong exhibited a specimen of pure crystallised glycerin from Messrs. Dunn and Co., of Stratford.—Mr. E. Neison then communicated a note on sebate of cobalt.—After which Dr. C. R. A. Wright gave an abstract of Part IV. of the researches by himself and Mr. G. H. Beckett on narcotine, cotarnine, and hydrocotarnine; on oxynarcotine, a new opium educt, and its relationship to narcotine and narceine.—The last paper was on a method for estimating bismuth volumetrically, by Mr. M. M. P. Muir.

Zoological Society, Jan. 18.—Mr. Robert Hudson, F.R.S., vice-president, in the chair.—Prof. A. H. Garrod read a paper on a peculiarity in the carotid arteries and on other points in the anatomy of the Ground Hornbill (*Bucorvus abyssinicus*).—Mr. Edward R. Alston read a paper on the classification of the order Glires. Lilljeborg's sub-orders *Glires simplicidentati* and *duplicidentati* were recognised, the former being divided into sections equivalent to Brandt's sub-orders *Sciuromorphi, Myomorphi,* and *Hystricomorphi.* A third sub-order was proposed for the reception of the fossil form *Typotherium.*—A communication was read from Mr. E. A. Liardet, containing notes on the Land Shells of Taviuni, one of the Fiji Islands, with descriptions of several new species.—Mr. E. A. Schäfer read a paper prepared by himself and Mr. D. J. Williams on the structure of the mucous membrane of the stomach in the kangaroos, in which he gave a minute description of the histological characters of the different portions of this organ.—A communication was read from Mr. W. H. Hudson, containing notes on the habits of the Rails of the Argentine Republic.—The Hon. W. H. Drummond read a paper on African Rhinoceroses, in which he gave reasons for believing in the existence of five species in Africa, including *R. oswelli,* which, however, might probably be merely a variety of *R. simus.*—A communication was read from Mr. E. Pierson Ramsay, containing a continuation of his remarks on the birds met with in North-eastern Queensland, chiefly at Rockingham Bay.—A communication was read from M. L. Taczanowski, containing the description of a spotted deer found in Southern Ussuri, district of Amoorland, for which he proposed the name *Cervus dybowskii.*—Mr. A. G. Butler communicated a revision of the Lepidopterous genus *Teracolus,* with descriptions of the new species.

Geologists' Association, Jan. 7.—Mr. Henry Woodward, F.R.S., vice-president, in the chair.—On the geology of New Zealand, with special reference to the drift of that country, by Dr. Hector, C.M.G., F.R.S. The author first drew attention to the geographical position of the islands, indicating on the South Polar chart their situation relative to known lands of the Antarctic area. Great ice-packs encumber the intervening ocean, circulating around the pole; travelling in a spiral, and thus increasing their distance from the centre. On the meridian of South Shetland, as low as 40° S. latitude, the seas are at all seasons crowded with icebergs, but there is an indentation of the ice-pack opposite Australia and New Zealand, though erratic masses escape sometimes. There are, however, five degrees of latitude off the extreme south of New Zealand, clear of the limit where icebergs are ever found. As regards latitude the islands occupy a position equivalent, in the Northern Hemisphere, to a line between Paris and Algiers. They lie parallel to Australia, 1,200 miles E. by S., and repose on a sub-marine plateau, which, along the west shores of the islands, is submerged to a depth of from 1,200 to 1,300 feet, but further westward terminates in water 6,600 feet deep. The edge of this plateau comes close in shore on the S.W. extremity of the Southern (middle) island. Thus New Zealand is a remnant of a once far more extensive land, whose eastern boundaries are not as yet clearly defined, but the author was disposed to include the Chatham Islands as a portion of it. *North Island.*—The eastern shore is the boldest; foul weather, and consequently denudation, coming from the N.E. The west side is more shelving; but the great volcanic boss of Mount Egmont, which rises at a gentle angle to a conical summit, protrudes its protecting buttresses of lava far into the western sea, and has thus been the means of preserving a great tract of Miocene tertiaries behind it; these constitute some of the best land in the country. *South Island.*—The denudation comes from the west: its western shores also approach nearer to the edge of the plateau, and the mountains of the south-west angle rise from a profound abyss to a height of from 4,000 to 5,000 feet. In the North Island a belt of hard rocks, consisting of the Upper Palæozoics, and the older Mesozoics, constitutes a sort of back-bone, occupying the east-central portions, against which the softer beds of more recent age recline. In the South Island this belt of Upper Palæozoic rocks, constituting the high mountain chain known as the Southern Alps, sweeps down through the centre with an incline towards the west, and then curves round towards the east again quite to the sea on that side. Against these also the Upper Mesozoics and Tertiaries recline. On the west and south of this easterly bend of the belt of the newer Palæozoics a great mass of foliated rocks occur in the province of Otago, constituting the well-known gold-field. In the far south-west we have only crystalline rocks, and these belong to a series which seems to reappear in much of the detached lands of the Southern Ocean, such as Kerguelen's Land, Auckland Islands, &c., where Miocene volcanic rocks also occur. The meteorology of the country, as having an important bearing on the denudation of the surface, was next considered. Referring principally to the Southern Island, we have here the mixing point of the N.E. and S.W. currents. On the west side, at Okitika, the annual range of temperature is 50°; on the east side, at Christchurch, 65°; moisture, west side, 90°, east side, 75°; rainfall, west side, 120 inches; east side, 25 inches; number of rainy days, west side, 202; east side, 91. Much of this enormous precipitation is deposited as snow in the Southern Alps, which

©1876 Nature Publishing Group